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AUTHOR Andersen, David F.
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ABSTRACT

This paper reports a case study of the implementation within the special education division of the Massachusetts state department of education of fiscal reforms required by the Massachusetts Comprehensive Special Education Statute, Chapter 766. Three theoretical perspectives were used to organize the study--a rational, organizational, and cognitive view of the implementation process. By examining the same series of events from three theoretical perspectives, an attempt was made to understand how different theories contribute to the understanding of a single series of events. The study concludes that different theoretical perspectives cover substantially disjoint bodies of evidence and are based on different conceptual vocabularies and notions of what "good" implementation should be. Also, each perspective yields different action recommendations for practitioners. The specifics of these differences are explored in depth for the case and three perspectives are presented in the research. Given the large degree of noncommeasurability between competing theoretical perspectives, practitioners should have only modest expectations for the utility of theories of implementation, using their own best intuitions to select those theoretical lenses that best help to attain their own well-defined objectives. (Author/IRT)

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IMPLEMENTING FISCAL POLICIES FOR SPECIAL EDUCATION AT THE STATE LEVEL:

Three Perspectives on the Implementation Process of Chapter 766[1]

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David F. Andersen
Graduate School of Public Affairs
State University of New York at Albany
Albany, New York 12222

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This paper reports a case study of the implementation of fiscal reforms of the Massachusetts Special Education Law, Chapter 766. These reforms took place within the Division of Special Education between 1975 and 1977. Three theoretical perspectives were used to organize the study--a rational, organizational, and cognitive view of the implementation process. By examining the same series of events from three theoretical perspectives, an attempt was made to understand how different theories contribute to the understanding of a single series of events. More generally, what are the strengths and limitations of any theoretical perspective in understanding implementation? What can implementing practicioners learn from theories of implementation?

The study concludes that different theoretical perspectives cover substantially disjoint bodies of evidence and are based upon different conceptual vocabularies and notions of what "good" implementation should be. Also, each perspective yields different action recommendations for practitioners. The specifics of these differences are explored in depth for the case and three perspectives presented in the research.

Given the large degree of non-commeasurability between competing theoretical perspectives, practicioners should have only modest expectations for the utility of theories of implementation, using their own best intuitions to select those theoretical lenses which best help to attain their own well-defined objectives.

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I. THE PROBLEM

The enactment of the Bartley-Daley Act (Chapter 766) in 1972 triggered a host of changes in the schooling of children with special needs in the state of Massachusetts. Designed to be a comprehensive reform of special education practices in the state, the act mandated sweeping changes within individual classrooms, within the organization of individual schools, and within the administration and management of school districts and educational collaboratives. The State Department of Education underwent substantial transformation within it regional and central offices in order to comply with the act. All of these changes have not occured smoothly and without implementation problems. A growing body of research literature is focusing on the problems associated with implementing Chapter 766. Because Chapter 766 is an archetypical example of attempted large-scale social reform, the examination of the implementation of 766 is of interest to a broader audience than just special educators. The story of 766 is, in microcosm, the story of planned attempts to change social institutions in modern America.

In this study, one piece of the total implementation problem is examined in detail--namely the implementation of reforms in the mechanisms used to fund Chapter 766. The research reported here is based upon two and one half years of participant-observer research within the Division of Special Education, Mass. Department of Education. The fiscal decision-making of key personnel within the Division of Special Education has been described from three distinct analytic points of view--from an organizational, a rational, and a cognitive point of view. Each of these three analytic frameworks highlights different aspects of the decision-making process and leads to substantially different recommendations concerning how to best implement reforms such as Chapter 766.

The fact that different theoretical interpretations of the same set of implementation events lead to substantially different stories of the implementation process with different practical implications in turn leads to the question of central concern in this paper: What is the proper role for competing theoretical interpretations in guiding attempts to improve the implementation process? More generally, what is the proper role of social science research, characterized by multiple, competing theoretical perspectives, in guiding applied social action?

One rather simplistic view of the role of social theorizing sees the social sciences as more and more closely approximating the natural sciences. From this point of view, the role of social scientific research is to build validated, predictive models of social phenomena. Guided by a deeper theoretical understanding of how social processes (in our case the implementation process) function, practicioners can predict the outcomes of proposed policy activities and consequently use theoretical considerations to help them design "best" policy solutions. From this view of theory, the existence of multiple competing views of the same phenomena is explained by the relative infancy of the science of social theorizing. The social sciences are currently experiencing some sort of pre-paradigmatic drift. Eventually the confusing conglomerates of theoretical perspectives will be resolved as one or several research paradigms come to dominate a particular class of phenomena (much the same as Maxwell's field force equations came to dominate thinking about electromagnetism in the late nineteenth century).

Other students of social theorizing have suggested that theories of social phenomena serve to articulate normative models of how practicioners should behave as much as they serve to describe and predict social behavior. From this point of view, multiple theoretical explanations of a single class of

phenomena exist because social scientists of different ideological persuasions tend to articulate different normative models of social behavior. Hence the existing plethora of implementation theories implies competing definitions of what managers should or should not attempt to accomplish when implementing social reforms.

Yet a third view of social theory implies that the value of social theorizing rests in the ability of the theorist to crystallize novel views of the implementation process that can serve as heuristic guides to the managers who must grapple with complex, practical problems. Theorizing is like vocabulary building, creating novel images and metaphors that neatly capture the essence of a particular class of social phenomena. Theorizing provides a commonly recognized medium for communicating insights among practicioners. Hence in the case of implementation of social reforms many theories exist because different practitioners are facedwith unique implementation problems and need many different vocabularies to frame their thinking about these problems. (For example, the implementation problems associated with 766 facing the classroom teacher are quite different from those facing fiscal decision makers within the Department of Special Education. Hence different theories woul be appropriate for the practical purposes of the teacher and the fiscal manager.)

The above rather broad questions concerning the role of social theory in guiding applied activity are explored within the more specific context of the role of three competing theories used to explain fiscal decision-making for 766 within the Massachusetts State Department of Education. After a brief discussion of the background to the case study and its methodology, the results of the research are presented along with a discussion of the role the three different theories can play in guiding future implementation efforts.

II. CASE BACKGROUND

In 1972, Chapter 766, a comprehensive reform of the education of children with special needs passed the Massachusetts State Legislature. The law was first implemented in local districts in the fall of 1974. By December of 1975, a full year after the formal implementation of the law, the state agency administering the law realized that immediate improvements in the procedures and policies used to fund the law would be necessary if the law were to survive.

For six months prior to the fiscal crisis of December 1975 the author had been involved as part of an external consulting team in an internal review of the management practices within the Division of Special Education. He continued that involvement from December 1975 through April 1977. During this period, the division underwent a process of reexamining its own stance with respect to the funding of the Chapter 766 legislation. This study is based upon research completed during these time periods.[2]

The case of Chapter 766 fiscal policy reform within the Division of Special Education has several interesting properties:

1) Long Run Policy Development. The policy development that occurred within the division was not a "one shot" affair. This development spanned nearly two years, during which time the agency had an opportunity to exhibit considerable learning. The study emphasizes longer run learning patterns of individual managers and of the organization as a whole.

2) Scale of the Project. The scale of activity over the two year period was fairly well-contained within the Department of Education. The active locus of policy development covered no more than twenty or thirty managers. Furthermore, internal management procedures could make a difference in this case; the division had considerable latitude in defining how it wished to interpret the funding language contained within the enabling legislation.

Hence this particular case was of a compact and relatively easy-to-understand scale.

3) Access to Evidence. Because the author was actively involved in the agency over an extended period of time, he had excellent access to a fine level of evidence in the form of meeting agendas and minutes, personal notes taken at such meetings, and private conversations and candid observations on the part of key managers. Such evidence is customarily lost after decisions have been made and researchers are left with whatever evidence becomes deposited in the agency's archives.

III. METHODS AND EVIDENCE

Figure 1 summarzied the four steps in the research strategy used to analyze the case from each of the three perspectives: formulate naive theory, empirical investigation, modify original theory, and derive conclusions.

Each of the four steps is described in more detail below.

1) Formulate Naive Theory. The first step in researching each of the perspectives was to comb the literature for a set of theoretical propositions that would summarize that body of theory. Based upon the theory drawn from the literature a set of "naive" propositions were derived, hypothesizing how decision making in the implementation process should be viewed from the given theoretical perspective. These naive propositions formed the working hypotheses guiding the initial field work.

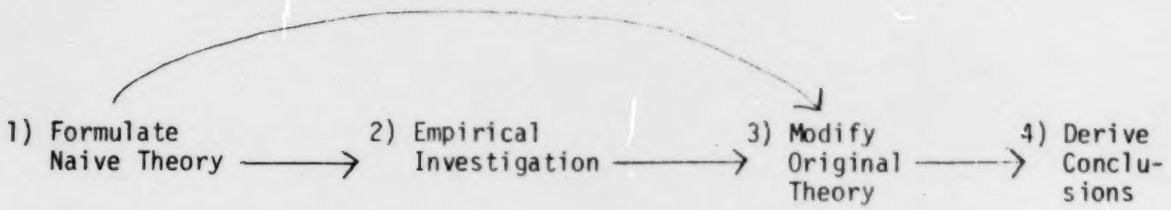

FIGURE 1: Four Steps in Research Strategy Used in Each of the Three Perspectives

2) Empirical Investigation. Armed with three sets of working propositions, one for each of the three theoretical perspectives chosen, the actual investigation of decision making within the Division of Special Education was begun. Since the purpose of the research was not to test specific hypotheses, but rather to generate new insights (that may be more rigorously verified later on), the original, naive theory acted as guideposts, filtering out the important from the inconsequential within each frame of reference. It was hoped that the empirical investigation would generate mepirically-grounded insights that could be used to modify the original propositions.

3) Modify Original Theory. Based upon the original naive theory and experiences gained in the case study, three modified sets of propositions were derived that served to frame the case story from each of the three perspectives chosen. By examining the original naive propositions and the modified propositions, it became possible to succinctly describe what had been learned from experiences in the case study since the changes between the two bodies of propositions must be attributed to learning that occurred during the case study.

4) Derive Conclusions. Finally, based upon the modified theory and the case study, a set of specific recommendations were derived detailing how to bettwer manage the policy-making process form each of the three perspectives chosen.

Because the investigation is based upon three different bodies of theory, the research had to rely on multiple streams of evidence. Five independent streams of evidence used in the study are summarized below.

Formal Interviews. Over thirty formal interviews were conducted during the course of the research. These interviews were transcribed either from tape or notes and returned to the interviewee for comment and review. They

form a rich source of first-hand descriptive verbatime evidence detailing how key managers were thinking at various points in time.

Questionnaires. Self-administering questionnaires were distributed to assess how key managers were alloting their time to fiscally-related tasks.

Archival Evidence. Publications external to the Department of Education, such as journal articles and newspaper articles, chronicle how the world outside of the department was looking at Chapter 766 and the adequacy of its funding mechanisms. Evidence of this sort provides an important check on how well the division was monitoring the mood in its own operating environment.

Decision-Making "Residue." In the course of a decision-making process, an organization normally amasses an immense quantity of records that capture the thoughts and activities of key managers in a most detailed fashion. Most of these agendas, minutes, working memos, first sketches of position papers, and guidelines are normally lost to the public record. Once decisions have been made, they are summarized in a "cleaned up" after-the-fact manner and many of the blind alleyways and dead-ends explored and then dropped from consideration are lost to the public record. A distorted image of the decision-making process as more orderly than it actually is emerges. In this study, several thousand pages of such decision-making "residue" has been systematically collected, catalogued, and combed for meaning.

Personal Observations. Perhaps the richest source of evidence upon which this study is based is personal observations. These personal observations represent notes taken at key meetings, informal and candid discussions with key managers, and reflections on the meaning and significance of events from each of the three theoretical perspectives. In addition, these personal observations, captured in a daily log of events, detail how the author spent all of his time while working within the agency.[3]

IV. DIFFERENT THEORIES HIGHLIGHT DIFFERENT ASPECTS OF THE IMPLEMENTATION PROCESS

Each of the three perspectives examined, highlights different aspects of the implementation process. Each perspective treats identically the same series of events. Yet each theory uses different vocabulary and concepts to interpret those events. Different evidence is highlighted by each of the three perspectives. Each of the three perspectives arrives at qualitatively different implications and conclusions concerning how to best manage policy modeling. Without a doubt, the images of policy making created by each of the three perspectives are closely related to one another, but the significant differences between the theoretical, empirical, and normative implications of the three views warrant considering them as rather distinct policy worlds.

To examine these propositions, a test was performed on the evidence collected as part of the case study reported in this research. A reprsentative sample of the pieces of evidence used in the case study was assembled and catalogued.[4] Then each piece of evidence was subjectively coded according to how well that evidence was "covered" by each of the three perspectives on decision making used in the case study. The broad coding rule was that a piece of evidence would be considered "directly covered" if that piece of evidence could be "explained well in terms of the theoretical terms of the given perspective." The general test would be the "extent to which the vocabulary employed by the theory seems to describe the activities summarized by the evidence." A piece of evidence was coded "indirectly covered" if "by inference it could be construed as supporting propositions and assertions

made in the theory under consideration." Finally, a piece of evidence was boradly considered "not relevant" if "it seemed awkward to explain the activities implied by the evidence within the theoretical framework under consideration." An extensive list of coding rules was used to amplify the borad guidelines presented above.

After the coding was completed, analysis was completed on the sample of data to examine the overlap of the coverage of each of the three theoretical perspectives. Of course, the results presented below would vary in detail depending upon the specific rules used in the coding procedure. However, tests with third party coders seem to indicate that the overall pattern of results reported below do not change significantly given different subjective coding rules. That is the percentages of direct versus indirect coverage may vary from one coding scheme to another, but the conclusions (as opposed to the specific numeric values supporting one version of the conclusions) are not sensitive to different subjective coding schemes.

Direct Versus Indirect Coverage for Each Perspective

Table 2 reports how well each perspective covered the evidence for the selected sample of evidence coded. The rows show how well each perspective either directly covered, indirectly covered, or did not cover the total body of evidence. The columns show the percentage coverage by each type of evidence for the rational, organizational, and cognitive framework. The sum of each column must be 100%.

The overall pattern of evidence coverage seems quite clear. Each perspective directly covered some fraction of the evidence (in this case about 25%) and left a somewhat smaller fraction of evidence not covered.

	Rational Framework	Organizational Framework	Cognitive Framework
Evidence Covered Directly	n=16 25%	n=16 25%	n=18 28%
Evidence Covered Indirectly	n=33 52%	n=42 67%	n=41 64%
Evidence Not Covered	n=15 23%	n=5 8%	n=5 8%
	Total=64 Rational	Total=64 Organizational	Total=64 Cognitive

Figure 2: How Well Each Perspective Covered the Evidence (selected smaple of evidence)

The majority of the evidence was indirectly covered by a given perspective. One improper use of Table 2 would be to try and interpret the reported results as a "horserace" between the various perspectives, attempting to determine which perspective is somehow best. This interpretation would be invalid for several reasons. First the exact percentages presented in Table 2 could change if different subjective coding rules were to be used, thereby possible changing the winner of the race. Second, Table 2 gives no indication of the relative importance of the pieces of evidence covered

by each perspective. It is possible that the rational persepctive covers the most critical pieces of evidence whereas the organizational perspective covers evidence that really seems quite inconsequential (or vice versa). To understand the real importance of Table 2, we must examine the amount of overlap in direct coverage between the three perspectives.

Non-Overlap in Direct Coverage. Figure 3 repots the overlap between evidence directly covered by each of the three perspectives. This figure is a detailed breakdown of the first row of Table 2. For example, of the 16 items directly covered by the rational perspective in Table 2, 7 of these were directly covered only by the rational perspective, 8 were covered jointly by the rational and cognitive frameworks, 1 was covered jointly by the rational and organizational frameworks, and 0 were covered directly by all three of the perspectives. The point of Figure 3 is that, to a surprising degree, the three perspectives directly covered indpendent bodies of evidence. There is relatively little overlap in pieces of evidence covered jointly by more than one perspective.

A second point is that direct coverage of the evidence increases dramatically when more than one perspective is used. Greater insight into a much broader range of evidence occurs when multiple theoretical perspectives are employed in the analysis. Not reported in Figure 3 is some indication of which perspective appears to cover the most critical pieces of evidence nor how much overlap there is between evidence indirectly covered and how indirect coverage increases with the use of more than one perspective. The reader interested in pursuing these issues in more depth is referred to the original study.

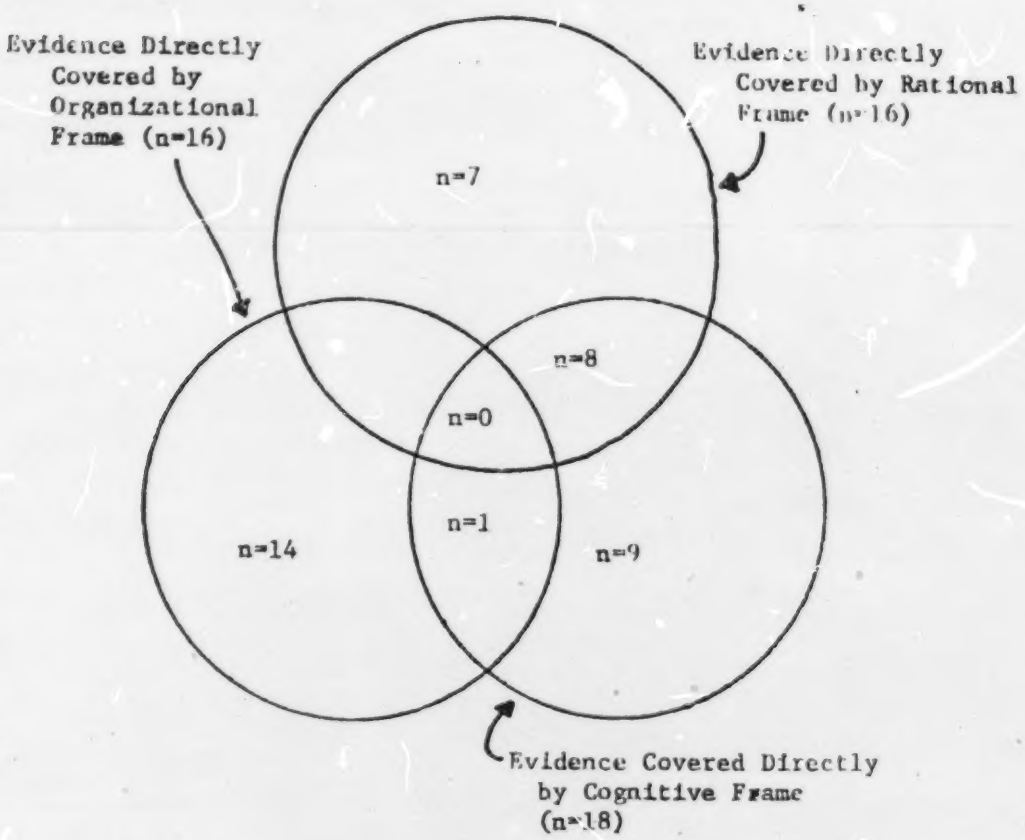

Figure 3: Overlap Between Evidence Directly Covered by Each of the Three Perspectives (total universe of evidence pieces covered by one or more perspective = 40 out of total of 64)

Although the discussion in this section was of necessity confined to the specific case of evidence collected and analyzed within this case study, it would appear highly probably that the underlying generalities concerning empirical coverage and overlap associated with multiple theoretical perspectives on a single case would hold true for a wide class of social scientific research problems. Specifically, the empirical importance of using multiple perspectives to cover a wider body of evidence might be valid under a wide range of possible social scientific inquiries.

In addition to indirectly or directly covering different bodies of evidence, each of the three perspectives on implementation uses different vocabulary to describe the implementation process, rest upon different normative conceptions of what good implementation should be, and most importantly points to different action steps that should be taken by implementing practicioners. We now explain in greater detail the substantive differences between the three perspectives for the case under study.

V. A RATIONAL VIEW OF FISCAL IMPLEMENTATION

A rational view of implementation may be described in terms of the basic vocabulary and concepts used within that view, the normative basis of the view, and the recommendations for better implementation resulting from a rational perspective.

V-A. ORGANIZING CONCEPTS OF THE RATIONAL VIEW

A brief review of some of the dominant concepts used within a rational theory of making and implementing decisions is presented below:

Alternatives. The rational theory usually begins with an explicit articulation of the range of alternatives under consideration. Usually, the alternatives are imagined to be exhaustive, but recent modifications of the theory allow for the range of alternatives considered to be constrained by the cost of seeking information.[5] Specification of the complete range of alternatives is nearly equivalent to specifying the boundary of the problem under consideration.

Consequences. Some assessment must be made of the consequences of various alternative policies. Many techniques for assessing consequences exist, ranging from simple subjective estimates of probable outcomes to complex system simulation exercises. All of these techniques attempt to eliminate uncertainty in the estimation of alternative outcomes.[6]

Goals and Objectives. Alternatives and their consequences must be measured against some goals or objectives that imply an underlying set of values. Notions of utility theory treat many of the thorny problems of value explicitly.[7] Other analytic techniques concentrate on the explication of alternatives and consequences and leave the value question implicit within the analysis. All techniques tend to force commeasurability between conflecting goals and objectives. Either implicitly or explicitly an attempt is made to reduce various alternatives involving trade-offs to one or more common metrics.

Choice. Rational decision making consists of choosing between the universe of possible alternatives given a comprehensive analysis of outcomes and values. Choice mechanisms tend to force trade-offs. They may be explicit (such as optimizing routines) or they may be left to the informed discretion of the decision maker.

Collective Decisions. Within the analytic paradigm, organizations are viewed as a single rational actor. Joint decisions are made through the consensus of reasonable men agreeing on a common definition of alternatives, outcomes, and, hopefully, values. Explicit public calculations aid in arriving at public consensus.

Problem Boundary. An important aspect in the selection of alternatives is the precise articulation of the common problem under study. The universe of alternatives is constrained to those that address a specific problem.

If rational solutions fail, this is often due to an inappropriate selection of problem definition or boundary. Analysis proceeds as an iterative process whereby experience gained in the past attempts at solutions leads to a more sharply defined problem or a more inclusive boundary of alternatives.

V-B. NORMATIVE BASIS OF THE RATIONAL VIEW

A Rational view of decision-making and implementation leads to fairly straight-forward definitions of what "good" decisions and implementation processes should look like. Implementation decisions should be based upon an exhaustive search of all possible alternatives. A complete analysis of the consequences of projected actions should be undertaken and some explicit statement of objectives or values should guide the final choice between alternatives. Finally, organizational managers should foster explicit discussions between interested parties to uncover differences in their perceptions of the available alternatives, the outcomes of such alternatives and how the various outcomes should be weighed.

Although the rational view does provide a clear-cut yardstick for defining how decisions should be made and programs implemented, such a view does not speak to the practical mechanisms necessary to obtain results.

V-C. RATIONAL IMPLEMENTATION RECOMMENDATIONS.

Because a rational view of decision making and implementation is so highly normative, few practical action recommendations emerge from taking a rational view of implementation (perhaps with the exception of some sort of broadly-worked admonishment to be more comprehensive in one's outlook--to explore more alternatives, or to more thoroughly examine consequences, or

to be more explicit in defining the objectives by which decisions are being made.)

If any practical recommendations were to emerge from this case study, they would center on issues of how the initial questions being answered by rational analyses get raised. To a large degree, students of rational analysis ignore considerations of how questions are raised for discussion within an organization. The case of fiscal reform for 766 suggests that the process of raising questions within an organization is perhaps the most important phase of a complete rational analysis of a problem and its potential solutions.

VI. AN ORGANIZATIONAL VIEW OF FISCAL IMPLEMENTATION

As with the rational perspective, the organizational view of fiscal implementation may be broken into three parts: concepts underlying an organizational view of decision making and implementation, a discussion of the normative underpinnings of organizational perspective, and finally practical action recommendations emanating from an organizational perspective.

VI-A. ORGANIZING CONCEPTS OF THE ORGANIZATIONAL VIEW

The organizational theory of decision making and implementation provides the most coherently articulated alternative to the rational theory. The recent antecedents to this body of thought are found in the early works of Chester Barnard[8] and Herbert Simon.[9] The theory received continuing development at the Carnegie School in the late 50's and early 60's.[10] The first

complete expression of the theory is contained in Cyert and March's Behavioral Theory of the Firm.[11] Subsequent theoretical work has expanded the theory from private firms to the public sector.[12] Recently, the theory has received much empirical corroboration. Most recently, Steinbruner has explicitly linked the organizational paradigm with feedback concepts under the rubric of "cybernetic decision theory."[13]

A summary of the major principles of the organizational or cybernetic paradigm of decision making is presented below:

Multiple Actors and Parochial Interests. Policy is set by a coalition or organizational actors all of whom are pursuing a parochial set of interests and priorities.[14] The facturing of organizational responsibility and interests inherent in this model stands in sharp contrast to the single rational actor or collective decisions of the analytic paradigm.

Goals as Constraints. Organizations do not form goals that are in some sense commeasurable. Instead, they tend to monitor a few key variables and take corrective action when the performance of these variables differs from some desired state. In essence, organizational goals are a series of "don't go below or above" constraints.[15] As long as the organization's performance rests within acceptable limits, the organization continues to function on an even keel.

Sequential Attention to Goals. Since goals are really a set of more or less independent constraints, organizations will tend to pay attention to goals one at a time.[16] That is, organizations will pursue a "grease the squeaky wheel" theory of management. Since goals are not considered simultaneously, trade-offs between goals will not receive explicit attention.

Standard Operating Procedures. Each organizational component is only capable of executing a limited number of standard procedures or programs.

The range of possible policy options is usually defined by the narrow range of policy responses available to the organization.[17] In general, standard procedures respond to only a few variables and cannot adapt to a wide variety of circumstances.

Decomposable Environments. Ordinarily, the organization functions by assigning one sub-unit to monitor some single aspect of its environment. Since each sub-unit is dealing with only one or two factors in the organization's environment, it can afford to develop stable procedures and programs to deal with the limited variability in its sector of this environment.[18] Of course, if the organization's environment is highly inter-coupled or changes rapidly then stable organizational procedures will be dysfunctional.

Problem Directed Search. When an organization sub-unit deviates from a constraint goal, it will initiate a search for solutions. In general, the search for alternatives tends to be simple minded, usually searching those alternatives nearest to current policies. The search sequence does not attempt to be complete nor to value the various alternatives. Instead a limited number of satisfactory alternatives are uncovered and simple choices are made.[19] Within this "satisficing" model of search, the order in which alternatives are generated strongly influences which alternative is chosen.

Information Screening. Nearly all aspects of the policy setting process are in part determined by how information flows through the organization. Goal attention and problem search mechanisms are critically sensitive to what information is available to key actors when. Hence, how information is channeled becomes critical to how policy becomes formulated.[20]

Negotiated Environment. Organizations do not attempt to predict the consequences of their actions far into the future. Instead they tend to take short run actions and then make corrections based on feedback from

the environment. Long range policy shifts result from the accumulation of rapid incremental shifts in goals as organizational sub-units interact with a relatively narrow portion of the environment according to relatively fixed operating procedures.[21]

Limited Flexibility. Because organizations adapt to their environments incrementally through slight modifications in their standard operating procedures, they will only be capable of slow adjustments with limited flexibility. Policy alternatives that recommend changes that differ widely from existing routines or require coordination of several organizational sub-units are not likely to be successfully implemented.[22]

Normative Basis of the Organizational View

As opposed to a rational view, an organizational view of decision making and implementation more strongly emphasizes concrete mechanisms under the control of managers when defining how implementation should occur.

Within the organizational view, well-implemented programs imply changes in an organization's standard operating procedures. In order for implementation to be successful, managers should match the organization of their operating units to the major service demands imposed on the operating agency by its environment. Specifically, the operating goals of each operating unit within an agency should be matched to needs of some constituencies. In the case of Chapter 766, there was no operating unit within the Department of Education specifically charged with overseeing the funding of special education. Some units oversaw the funding of education in general, and the Division of Special oversaw the program end of Chapter 766. Because organizational lines within the department were "mismatched" to a need within the broader special educational community, issues of how to fund special educational

"feel through the cracks" within the overall state agency.

Good implementation from an organizational point of view also implies that an agency closely examine how information flows into its operating units and how this information is processed by key decision makers. In the case of 766, key pieces of financial information were collected by the Department of education, but program managers within the Division of Special Education were either unaware of the existence of this information or had little experience and expertise in its interpretation. A key element in implementing changes in the funding of the law involved re-routing the routine flow of fiscal information into the Division of Special Education and having it become a part of routine decision-making procedures.

Organizational Implementation Recommendations.

The case studied in this research treated the question of how analysts working through a study group specifically set up to treat policy questions (a policy study group) can insure the effective implementation of policy results within the line operating units of an agency. Using an organizational line of analysis, the following ten precepts were outlined concerning how to implement more effectively policy recommendations:

1) Pay Attention to Membership of Policy Study Groups. This precept is addressed to the more general concern of properly positioning a policy reform effort within the organization. Overlapping memberships between policy study groups and implementing operating units is the single most effective mechanism linking operating units and study groups. Such overlapping memberships should be built into study groups from the start. When possible, top management should also be included in the membership of the

study group to insure effective linkages throughout the entire organization and a coordinated dissemination of policy recommendations.

2) Build Strong Surrogate Goal Structures into Study Groups. Because study groups typically do not have heavy operating responsibilities, such groups can become inactive when operational pressures mount in other corners of the organization. To compensate for this instability of study groups, pay much attention to structuring the groups activities (around goals such as position paper writing) so that there will be continuity and a sense of progress from one meeting of the group to another.

3) Identify Operating Units Responsible for Policy Execution. In general study groups will not be the operating unit responsible for actually implementing policy recommendations. Unless the analysis team can specify which operating arms of the organization will executive the policies emanating from the study, such recommendations stand a good chance of resulting in little more than intellectually pleasing abstractions. If an operating unit does not exist that is concerned with the recommendations in the study, a new organizational unit must be created or an existing one modified to include the policy area under its aegis.

4) Maintain Bridges Between Study Group and Operating Units. It is convenient for analysis teams to make the (fallacious) assumption that organizational members of the study group will maintain all of the necessary communication flows between the study group and the operating units identified as implementors. The more the analysis team knows about routine operations, the better they will be able to effect significant policy changes. Techniques for maintaining such bridges include scouting interviews, "leaking" preliminary policy results to operating units, receiving feedback from operating units on emerging policy directions, and when possible having

analysts serve as ex officio members of the operating units.

5) Plan the Diffusion and Solidification of Policy Innovations. Most policy innovations in complex operating environment cannot be implemented through the efforts of a single operating unit. The activities of the primary implementing unit will invariably impose operating demands on other units. The reactions of the non-implementing units can be critical in determining whether or not the proposed innovation succeeds in achieving its purpose. Explicit thought should be given to this process of policy diffusion early on in the policy design stages.

6) Elicit Feedback from Operating Units. This precept is a reiteration of the earlier one emphasizing the importance of building diffusion bridges between policy study groups and operating units. However, the emphasis here is on listening closely to the responses of the operating units to proposed policy changes. There is a strong temptation not to take the preliminary reactions of operating units too seriously as they may not be "up to speed" with all of the issues under discussion. Often first reactions of operating managers can give early warning of possible defects in emerging policy recommendations.

7) Be Wary of Recommendations Requiring Extensive Interunit Coordination. Although elegant solutions to policy problems can often be imagined if several operating units could be cajoled into a coordinated plan of action, such strategies are fraught with problems. There will be multiple operating units who will have to be persuaded and who will have to act in unison. In fact, recommendations requiring extensive coordination may often be recommendations for which there is really no possible implementing units. There will be no implementing units because the recommendation may "fall in between

the cracks" of several units, being tangentially related to many but the responsibility of no unit.

8) Assess Management's Complete Agenda. Because policy study groups often focus on one or several crisply defined policy problems, it is easy for teams of analysts to forget that these several problems are actually in competition for the scarce time and attention of key managers. This problem may be accentuated because analysts only interact with managers over the topics being treated by the study group and hence they may be ignorant of the broader agenda of issues that are currently receiving managerial attention. Brief interviews at several points in the study project will be helpful in keeping analysis teams aware of the complete range of managerial concerns. Such interviews can given analysts a good impression of what are some of the real but implicit organizational goals (by implication organizational goals are reflected in the time allocation of top management) and can help analysts to realistically assess what portion of managerial attention can possibly be allocated to policy problems under examination in the study group.

9) Insure Diversity of Analysis Team. An effective analysis team will encompass a wide range of skills ranging from those of technical analysts to those of a person able to manage a conflict-ridden meeting. Teams of analysts should contain a mix of persons able to perform the wide range of roles necessary for a successful policy reform project.

10) Be Alert to Environmental Disturbances. All of the above nine precepts have focused on ways to better manage the forces internal to an organization determining the success of a policy design project. That is, all of these suggestions have dealt with how to manage a study group and its interactions with its bureaucratic environment. Often policy is determined

by forces that are completely external to the host agency. Although these exogenous forces cannot be directly controlled by an agency's managers, careful attention can be paid to an agency's external operating environment in an effort to anticipate forces that may significantly impact on policy directions taken internally.

VII. A COGNITIVE VIEW OF FISCAL IMPLEMENTATION

In the third and final perspective used in this research, three threads within the literature were tapped to synthesize a so-called cognitive view of decision making and implementation. After this cognitive perspective has been described in more detail, we will proceed to examine what the practical implications of such a perspective might be for guiding implementation practicioners.

VII-A. ORGANIZING CONCEPTS OF THE COGNITIVE VIEW

The first body of evidence incorporated into this perspective investigates how the human mind responds to choice situations and recalls information under conditions of uncertainty. Steinbruner has succinctly summarized the implications of this body of experimental cognitive pscyhology for organizational decision making and implementation practices.[23] The second body of evidence examines differences between individual decision makers with respect to their styles of decision making and information processing.[24, 25] The final body of evidence investigates certain interactions between individuals and their peers as these small-group interactions impact on decision making and the effectiveness of implementation.[26, 27]

Several of the major traits highlighting the cognitive framework used in this research are presented below:

Limited Information Processing Ability. A recurring result of experimental cognitive psychology is the limited ability of the human mind to process simultaneous bits of information. A review of the literature on human cognitive decision-making processes reveals that often choices are not made by scanning all of the available options. Instead, decision makers tend to focus quickly on one or two plausible options.[29, 30] A theory of bureaucratic decision and implementation based upon these cognitive principles would argue that the key functions of organizational decision making must be understood in terms of principles such as these that guide decisions at the individual level.

Small Group Interactions. Steinbruner has identified reinforcements from peers as one of the key factors contributing to the stability of perceptions and the ability to resolve uncertainty in a complex environment.[31] The importance of small group functions as a key element in organizational decision can hardly be underestimated. The creation of a task force to deal with a specified problem creates a solidified perception of that problem that would not have been possible had various individuals attempted to tackle the same problem in isolation.

Reality Socially Constructed. Berger and Luckman have further extended the importance of small group interactions by arguing that group interactions can actually construct the images of reality that will become the bases for decision making. To a large extent, the alternatives, consequences, and values weighed in the decision-making process will be determined by how group interactions structure or create their images of the decision-making environment. That is, once a social group creates a shared definition of what is important and relevant to a given task or decision, this socially

constructed reality takes on an "objective reality" of its own.[32] In turn, the socially constructed, now objectified, perceptions of alternatives, consequences, and values feed back to reinforce the cognitive maps of individual decision makers.

VII-B. NORMATIVE BASIS OF THE COGNITIVE VIEW

A cognitive examination of decision-making and implementation procedures leads to yet another definition of what comprises good implementation and how managers should best implement policy innovations. For example, a cognitive perspective indicates that managers and analysts should spend considerable time structuring reports, forms, and artifacts pertaining to the proposed policy change clearly and succinctly so that the exact intent of the changes can be clearly and easily transmitted. In the case of 766 fiscal reform, personnel within the Division of Special Education spend an enormous amount of time finalizing the guidelines and regulations that were to be used by local school districts. From a cognitive point of view, these documents deserved such detailed attention because they were the primary artifacts available to localities for understanding the Department's intent in revising the rules for reimbursing expenditures.

Also, a cognitive perspective would emphasize the importance of creating samll, informal groups of managers cutting across functional responsibilities. In this way, individual managers can easily obtain different perspectives on the issues with which they are dealing on a routine basis. An important ingredient in implementing change in the funding of Chapter 766, was the creation of informal groups of departmental managers who met periodically to exchange ideas and perceptions of the problems involved in the funding

of the law. Without these informal networks, program people would have been less able to fully comprehend the fiscal issues needing attention and the finance people would have suffered from an incomplete understanding of the often complex program requirements built into the law.

In general, a cognitive view of implementation dictates that effective policy innovations must take account of the means whereby individual managers obtain the information to make decisions and the shortcuts that they routinely use to process that information and arrive at decisions.

Cognitive Implementation Recommendations.

The cognitive view of policy design outlined above has practical implications for the art of implementing policy innovations within organizations. The following several points outline the practical implications of the cognitive view highlighted in this case study.

1) First and foremost, understand the structure of current managerial thinking. Policy innovations result from the interactions between current managerial thinking and the mechanisms necessary to sustain that thinking. Effective policy changes can result only from the skillful management of these two classes of variables. The manager or analyst planning to effect policy innovations would do well to heed several broad caveats:

--Explicitly seek out pressure points to break the mutually reinforcing patterns between current patterns of thinking and the mechanisms used to reinforce that thinking. Sometimes this will involve finding a team of receptive managers to "host" a project, at other times it may involve redesigning a procedure or guideline to initially gain management attention.

--Do not underestimate the inertia of managerial thinking. Changes will not diffuse through an organization unless the working documents organizational structures, and vocabulary or concepts underpinning current perceptions significantly change.

--Plan the diffusion process explicitly and early on. It is unrealistic to assume that a good idea will catch on of its own accord unless someone (either the analyst, manager, or organizational hosts) explicitly manipulates the diffusion process.

2) Policy design must entail (and often begins with) changes in the thinking of individual managers. The practical implications of this generality are many and varied:

--At some point, an external analyst must either explicitly or implicitly assume the role of a teacher.

--Since changes in an agency's thinking must be translated into changes in organizational output, top management will be the most likely target for initial training (again either implicit or explicit training).

--Evoking a rational framework (and the attached mythos) is an effective means to secure initial cognitive changes. Specifically a rational framework:

i. Provides a normative framework that is somewhat independent of the existing patterns of thinking and hence has a high probability of generating novel insights.

ii. Counteracts cognitive tendencies to overly simplify complex decision situations, specifically forcing trade-offs to be squarely faced, and surfacing a broader range of alterantives for consideration.

3) Explicitly manipulate the diffusion of changes in thinking.

--In general, the diffusion of cognitive changes will involve changes in organizational structure or goals since these are two of the most powerful

mechanisms working to maintain the status quo.

--Exploit the following levers in managing the diffusion process:

i. Artifacts. Organizations often use artifacts such as policy guidelines or standardized forms to help shape and reinforce their thinking about a problem. Attempts to redesign policies must entail detailed resdesign of the artifacts used to reinforce the old policies.

ii. Organizational factors. Policy study groups can be powerful mechanisms to initiate creative thinking and to begin the diffusion of cognitive changes. However, whenever possible rely on operating units to diffuse cognitive changes throughout the agency. In general, exploit informal social groups as vehicles for gaining consensus and promoting changes in thinking.

iii. Concepts and Vocabulary. Whenever possible, crystallize major points into crisp concepts summarized by distinctive phrasing. The introduction of effective concepts, jargon, and vocabulary greatly facilitates the understanding of a complex policy area. Analysts who use the vocabulary prevalent within the organization stand greater chances of success.

4) Pay explicit attention to the many possible roles of the analyst. The cognitive view of policy making outlines several roles that must be adequately performed simultaneously by an external team of analysts. The neglect of one of these roles decreases the probability of project success. Note that roles do not necessarily correspond to individuals and that managers internal to the organization can often perform one of more of the possible roles.

i. Technician-analyst. Analysts or managers must be able to restructure existing information into interesting and novel images through the creative use of analytic of analytic techniques.

ii. Information broker. Much of the information needed to create novel problem definitions is contained in unwritten form within the minds of individual managers. Often all of the needed information is widely scattered throughout the entire organization. A skilled policy design team must be able to receive information from many corners of the organization, transform that information into novel problem definitions and then disseminate these new insights to yet other critical points within the overall organization.

iii. Teacher. Finally, a team of model-based analysts must be competent as teachers. Teaching activities need not be of the formal classroom type, but if new thinking patterns are to be first created and later on diffused through an organization, considerable learning on the part of managers throughout the organization will have to occur. Hence a crucial role of the team of analysts (be it an explicit or only implicit role) will be that of a teacher.

VIII. SUMMARY AND CONCLUSIONS

After a brief discussion of methods and evidence, Section IV demonstrated how different theoretical perspectives highlight substantially disjoint bodies of evidence. That is, although each theoretical frame covered most of the evidence analyzed, evidence covered most directly by one body of theory showed little overlap with evidence covered directly by a second theoretical

perspective. Types of evidence of central relevance to one theoretical perspective are irrelevant or marginally relevant at best from another perspective.

Sections V, VI, and VII amplified these empirical findings. In these sections we saw that each theoretical persepctive was organized around a different conceptaul vocabulary, implied a different normative view of how implementation should proceed, and led to different action recommendations for implementation practicioners.

These results suggest that theories of implementation may be useful to implementing practicioners, but practicioners should have modest and realistic expectations concerning the utility of any theoretical perspective on the implementation process. Specifically, based upon the case study, it would seem reasonable to expect that theories of implementation can:

1) Explain different aspects of an implementation situation by providing a conceptual vocabulary to frame one's thinking about a complex set of implementation events.

2) Define what "good" implementation or organizational performance should be. This normative component of a theoretical perspective is often implicitly hidden "between the lines" of a theory.

3) Lead to practical implementation recommendations. Of course, different theoretical perspectives may lead to different recommendations because each theoretical frame is based upon a different conceptual vocabulary and different notions of how implementation should occur.

However, practicioners should not expect that implementation theories are building or even building toward validated and predicative models of implementation processes. Realizing that competing theoretical perspectives

do exist and will continue to exist, practioners should not expect theoretical considerations to provide unambiguous guidelines for their actions. Since what view one takes determines what one sees, believes, and does; action recommendations will of necessity vary from one theoretical view to another.

As theories of implementation processes proliferate, these problems of non-commeasurability between theoretical results will be exacerbated. Practioners will continue to rely upon their own intuitions to help them select those theoretical lenses that best help them to attain their own well-defined purposes.

IX. NOTES

1. This paper is a condensation of a project reported as thesis research. For further details, see David F. Andersen, "Mathematical Models and Decision Making in Bureaucracies: A Case Story Told from Three Points of View," unpublished Ph.D. dissertation, Sloan School of Management, M.I.T., Cambridge, Massachusetts 02139.

2. A more detailed discussion of the background to Chapter 766 and the author's involvement in the policy redesign process is contained in David F. Andersen, op. cit., Chapter 3.

3. Methods are further described in Andersen, op. cit., Appendices B and C.

4. The complete catalogue of evidence used in the study and the method of coding it described herein are presented in Andersen, op. cit., Appendix C.

5. David Braybrooke and Charles Lindblom. A Strategy of Decision: Policy Evaluation as a Social Process. New York: The Free Press, 1970, p. 40.

6. Graham T. Allison. The Essence of Decision: Explaining the Urban Missile Crisis. Boston: Little, Brown and Company, 1971.

7. For example, see: Howard Raiffa. Decision Analysis: Introductory Lectures on Choices under Uncertainty. Reading, Massachusetts: Addison Wesley, 1970, Chapter 4.

8. Chester I. Barnard. The Functions of the Executive. Cambridge, Massachusetts: Harvard University Press, 1938.

9. Herbert A. Simon. Administrative Behavior: A Study of Decision Making Processes in Administrative Organizations. New York: Macmillan, 1965.

10. Especially, James March and Herbert Simon. Organizations. New York: John Wiley and Sons, Inc., 1958.

11. Richard M. Cyert and James G. March, A Behavioral Theory of the Firm. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1963.

12. For a review of some of the governmental application of the Cyert and March article see Allison, op. cit., p. 78.

13. John D. Steinbruner. The Cybernetic Theory of Decision: New Dimension of Political Analysis. Princeton, N.J.: Princeton University Press, 1974.

14. Cyert and March, op. cit., pp. 26-40.

15. Herbert Simon on "The Concept of Organizational Goal." Administrative Science Quarterly 9 (June 1964) pp. 1-22.

16. Cyert and March, op. cit., p. 113 and Allison, op. cit., p. 82.

17. Ibid., pp. 103-112.

18. Steinbruner, op. cit., pp. 56-62.

19. The first articulation of the problem-directed "satisfying" model is associated with Simon. See: Herbert Simon. Models of Man. New York: John Wiley andSons, pp. 270-272.

20. Allison, op. cit., p. 90.

21. Cyert and March, op. cit., p. 94.

22. Alison, op. cit., p. 94.

23. Steinbruner, op. cit., chapter 4.

24. Peter G. W. Keen. "The Implications of Cognitive Style for the Design of Computer Systems," Harvard Business School Working Paper Harvard Business School 72-43. November 19, 1972.

25. Steinbruner, op. cit., pp. 125-135.

26. A general theory of small group interactions leading to self-reinforcing images of reality is found in Peter Berger and Thomas Luckman. The Social Construction of Reality. Garden City, New York: Doubleday and Co., 1967, pp. 138-146.

27. Steinbruner, op. cit., pp. 121-122.

28. Steinbruner, op. cit., pp. 95-103.

29. J. S. Bruner, J. J. Goodnow and G. A. Austin. A Study of Thinking. New York: John Wiley and Sons, 1956, chapters 4 and 5.

30. Steinbruner, op. cit., pp. 114-120.

31. Ibid., p. 121.

32. Peter L. Berger and Thomas Luckman. The Social Construction of Reality: A Treatise on the Sociology of Knowledge. Garden City, New York: Doubleday & Company, Inc., 1967.